

PATENT SPECIFICATION

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(54) CANTILEVER MERCHANDISE SUPPORT

(71) We, READY METAL MANUFACTURING COMPANY, a corporation organised and existing under the laws of the State of Illinois, United States of America, of 4500 West 47th Street, County of Cook, City of Chicago, State of Illinois 60632, United States of America, do hereby declare the invention for which we pray that a patent may be granted to us and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to display equipment especially suitable for showing articles in retail stores and the like, and has to do more particularly with equipment of this character designed for hanging small items such as hardware, on a generally vertical wall for quick attachment and removal.

The invention may be considered an improvement in the well known "pegboard" type of display which has long been employed for hanging and displaying articles of all sorts.

Pegboards for a long time have had a generally standard form, consisting of rigid sheeting formed of a material, such as plywood, "Masonite" (registered trade mark) or other synthetic or "composition" substance, and provided with rows of regularly spaced holes for reception of hooks on which articles may be hung. Such boards are supported in a generally vertical plane by suitable props, and the holes are usually standardized to 3/16 inch diameter.

Despite its wide use, such equipment is subject to a number of serious objections. For one thing, the hooks, while inexpensive and convenient, readily fall out of the holes when not bearing a weight, because of the lack of retaining or locking means.

For another thing, such equipment is lacking in aesthetic attractiveness. Inasmuch as, under practically all circumstances, many of the holes remain unused while others are employed, they are starkly visible, marring the appearance of what might otherwise be a visually attractive display.

According to one aspect of the invention there is provided an article supporting cantilever-type hanger adapted for detachable engagement with an apertured supporting panel which hanger comprises

- a. a bar
- b. a plate fixed to said bar in a plane generally normal thereto,
- c. separate generally U-shaped tenuous elements connected to the upper and lower portions of said plate for detectable engagement with apertures in a supporting panel,
- d. the tenuous element connected to the upper portion of said plate terminating in prongs extending inwardly and upwardly beyond the upper edge of said plate, and
- e. the tenuous element connected to the lower portion of said plate terminating in resilient prongs extending transversely therefrom in directions slightly out of parallelism with each other to enhance their frictional engagement with the walls of the apertures in which they are to be inserted, to inhibit accidental displacement of the hanger from said panel.

According to another aspect of the invention there is provided a combination of panel and hanger as defined in the preceding paragraph wherein the panel has apertures for receiving the tenuous elements of the hanger, said apertures being substantially three thirty-second inches in diameter and bearing a pattern tending to distract attention from the apertures.

The panel, while it may be formed of a variety of materials, is preferably of relatively thin sheet metal such as steel or aluminum, reducing weight and cost, and is provided with a decorative surface so as to render hook-receiving holes therein inconspicuous.

To enhance further the inconspicuousness of the holes, the latter are substantially reduced in diameter, as compared to the 3/16 inch holes commonly employed in standard pegboard. Thus, the unoccupied holes are, for all practical purposes, normally invisible to casual inspection.

It is an aim of the invention to provide equipment of the type described specially designed for mass production and thus available in large quantities at low cost for chain stores, etc.

The invention will be further described by way of example and with reference to the accompanying drawings in which:—

Figure 1 is a fragmentary perspective view 10 of a portion of a wallboard carrying several forms of article-supporting bars or hooks (hereinafter for brevity referred to as bars);

Figures 2, 3 and 4 are fragmentary perspective views showing in detail several preferred forms of attaching means for the article-supporting bars;

Figure 5 is a fragmentary sectional view, partly in elevation, taken substantially along line 5—5 of Figure 1;

Figure 6 is a fragmentary sectional view, partly in elevation, taken substantially along line 6—6 of Figure 1;

Figure 7 is a fragmentary sectional view, partly in elevation, taken substantially along line 7—7 of Figure 1;

Figure 8 is a fragmentary sectional view, partly in elevation, taken substantially along line 8—8 of Figure 1;

Figure 9 is a fragmentary perspective view, 30 with parts broken out for added clearness, showing an arrangement for supporting the improved panel, prior to attachment, and

Figure 10 is a fragmentary perspective view showing the parts seen in Figure 9 after attachment is completed.

Referring to Figure 1, the invention contemplates a board or panel 10 to be used as a generally vertical supporting wall for articles to be displayed for sale, as aforesaid. Panel 10 may be supported in any suitable manner by props, braces or stands, as in the case of wall boards previously in use.

However, it has been found that a most convenient arrangement comprises a skeleton frame including posts *P* (Figures 9 and 10) of metal tubing of rectangular section having spaced slots *S*, commonly used for knock-down display equipment. Panel 10 is attached, as by welding, to suitable hollow support bars *B* which likewise have vertically spaced slots *S'*. Suitable hooks *H* interengage slots *S* and *S'*, whereby panel 10 is hung from horizontally spaced posts *P*.

Panel 10 may be formed of a wide variety 55 of materials. An important feature is that holes 12, arranged in any desired or convenient spacing and number, preferably in a regular pattern, are of a diameter substantially less than 3/16 inch, being the standard size 60 of apertures formed in currently used pegboard to receive hooks of standard character formed of 3/16" wire.

We have found that holes of substantially 65 3/32 inch or less, when viewed from a distance of a few yards, do not obtrude upon

the view of a person of normal vision and, hence for all practical purposes, may be said to be substantially invisible.

The "invisibility" of holes 12 is thought to be due to a combination of their small size and arrangement on the board in a regular pattern. The effect of non-obtrusiveness is obtainable if the holes are arranged in a rectangular pattern or non-rectangular pattern, such as circular or spiral, it being a psychological axiom that attention normally is not distracted by a regular or monotonous pattern, where the elements (individual holes in this case) of the pattern are inconspicuous. The number and spacing of the holes is a matter of choice.

Preferred material for panel 10 is a relatively stiff sheet material, preferably sheet metal, such as steel or aluminum. While the gauge or thickness is not considered to be critical, sheet steel of a gauge within the approximate range of 0.030 to 0.060 inch, depending upon load requirements, has been found to be suitable. Plywood or Masonite (registered trade mark) may also be used.

To enhance the inconspicuousness of holes 12 and to add to the attractiveness of the display, there is preferably imparted to panel 10 a decorative surface 15 in any suitable pattern or design, inasmuch as a visible pattern serves to distract a viewer's attention from holes 12. The surface design may be applied to the sheet in any known or other suitable manner.

For example, a coating or lamination of vinyl or other suitable plastic coating may be applied in any suitable manner, as by spray or roller application in fluid form or by adhesive application of sheet material. The pattern or design may be formed, as by printing on the coated panel 10 or on an applied sheet prior to application.

Otherwise, a surface design may be produced directly on the sheet metal by anodizing or other chemical or mechanical modification of said sheet material, without application of any surface coating. For example, plate 10 may be of a type known as "rigidized", which has had its surface deformed, as by a hard platen or roller, to impart a surface pattern or design. Other modes of deformation or other processes may suggest themselves to those skilled in the art to impart a surface design or pattern.

The article supporting bars employed in combination with the improved panel 10 are likewise believed to embody features representing marked advantages over the hooks previously used on pegboard to support articles, which hooks have a propensity to drop out. In contradistinction, the present cantilever bars are designed to lock themselves in place on the panel and cannot accidentally fall out of the holes, but must be removed by deliberate manual action.

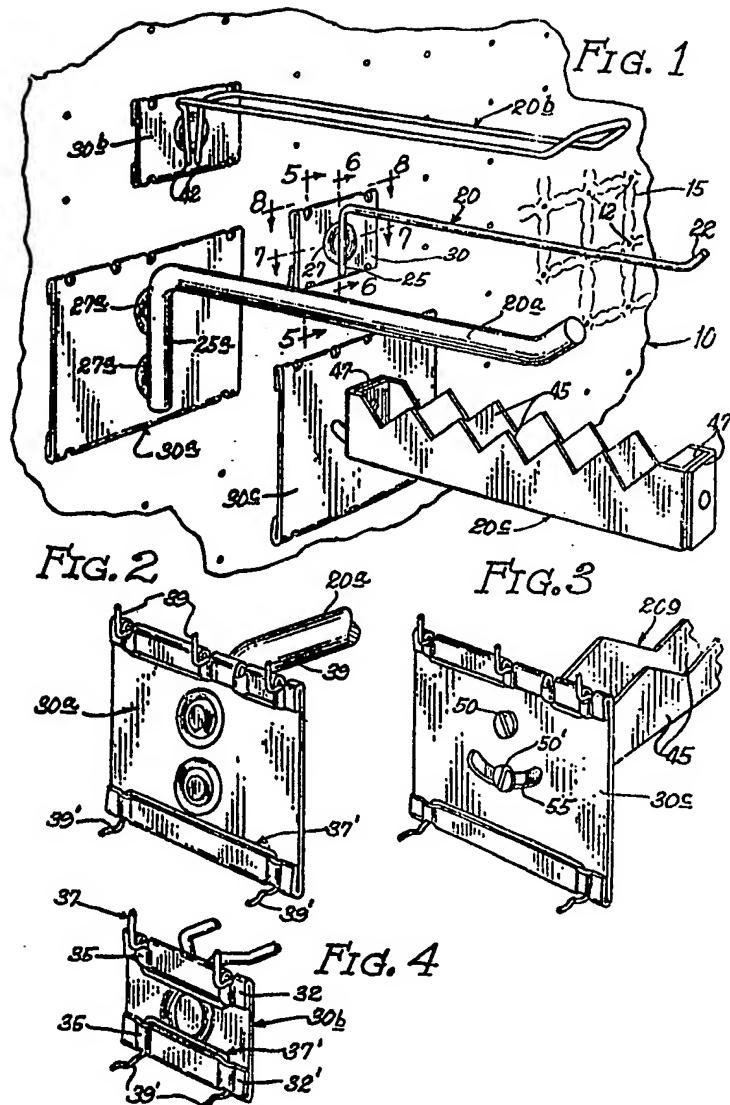
- In general, the cantilever bars, or brackets, comprise a generally horizontally extending cantilever member, the outer end of which is free and the inner end, adjacent panel 10 is secured to a device designed to be quickly attachable to and detachable from an apertured panel. Said attachment device in general comprises spaced wires insertable in holes of the panel, said wires including a pair, which are resiliently distortable to enter a pair of said holes, so that, after insertion, said resilient wires will automatically tend to spring back toward normal position and thus wedge or lock themselves, in place. 5
- Turning to the drawings, Figure 1 shows several forms of cantilever bars embodying the invention and designed to support articles of different shape, size and weight. 15
- Thus, numeral 20 represents a bar of simple form formed of wire or rod stock of suitable gauge, the free end 22 being slightly upturned to prevent a supported article from accidentally sliding-off. The other end of bar 20 is bent at about a right angle to provide a depending foot 25 which is secured in an expedient manner to a plate 30, preferably of metal. While numerous modes of attachment will suggest themselves to those skilled in the art, it has been found most convenient to form on plate 30, as by stamping, a forwardly extending annular boss or ring 27 to which foot 25 is attached, as by brazing or welding at vertically spaced points. 25
- The top and bottom marginal portions of plate 30b are bent rearwardly (Figures 4 and 5) to provide overlying flanges 32 and 32', said flanges being deformed to provide generally vertical tunnels 35. Upper flange 32 secures a generally U-shaped wire 37, the web portion 38 of which underlies flange 32, while the legs 39 pass through tunnels 35, above which the legs 39 are offset backwardly. Thus, legs 39 of wire 37 are insertable by a simple manual operation in a pair of horizontally spaced holes of panel 10 by a rotary motion. 30
- Secured by lower flange 32' is a locking wire 37'. This element, while generally U-shaped and retained by flange 32', similarly to upper wire 37, differs from the latter in the following respects. Wire 37', while of about the same gauge as wire 37, to be receivable in the holes of panel 10, is of resilient stock (upper wire 37 need not be). Leg portions 39' (Figures 2 and 4) may be spread at a slight angle to converge, or diverge, and may also be crimped instead of being straight like upper wire 37, as seen clearly in Figures 4 and 7. 35
- It will be apparent that, to attach plate 30 and the cantilever bar carried thereby to panel 10, legs 39' must be manually squeezed toward approximate parallelism to insert them into a pair of horizontally spaced holes and then pushed in, whereupon the legs tend to spring back to their normally angled relation, becoming wedged and locked in the holes. Thus, the bracket is secure against accidental loosening or dropping out and off the panel, whether carrying a load or not. Positive force must be applied in order to remove or reposition a bar. 50
- Obviously, it makes no difference whether legs 39' normally converge or diverge, as long as they are slightly non-parallel and resilient, thus producing a firm, resiliently wedging action when inserted in the holes. 55
- Bar 20a (Figures 1 and 2) is generally similar to the construction just described, with certain modifications designed to accommodate heavier loads. Thus, the rod stock employed is of heavier gauge, while its support is more rugged. A larger plate 30a is employed, the foot portion 25a being secured to a pair of vertically spaced annular bosses 27a, 27a in an otherwise similar manner to bar 20. 60
- Also, as seen in Figure 2, for greater support on the panel, plate 30a is provided at the top with more than two (in this case three) spaced hooks 39 as in the embodiment of Figure 4. The number may be increased to provide the desired strength, while the lower attaching wire 39', 39' may be similar to that of Figure 4, being crimped, as seen clearly in Figures 4 and 7, and resilient. 65
- Cantilever bar 20b (Figure 1) represents another form of support or hanger for displaying other types of articles. This bar is generally U-shaped, being formed of single rod of suitable gauge with its outer free end preferably bent upwardly to provide a stop, or hook. The inner ends of the rod are bent downwardly to provide feet 42 which are secured to plate 30b similarly to the embodiment of Figure 4, this plate being otherwise adapted to be detachably mounted on panel 10 in a manner similar to plate 30 described hereabove. 70
- Bar 20c (Figures 1 and 3) is still another form of cantilever support designed to carry non-slidably one or a plurality of articles of substantial bulk and weight. This hanger may be formed of one or two (in the embodiment shown) plates 43, 45 arranged in parallel vertical planes, the upper edges being serrated to prevent sliding of articles supported thereon. The ends of these plates are bent normally to form overlying flanges 47 which are secured together in any suitable manner, as by screws, rivets or brazing. 75
- The bar or bracket 20c is attached to a plate 30c in any suitable manner, as by screws 50, 50' (Figure 3) spaced vertically on plate 30c, lower screw 50' being ridable in an arcuate slot 55 formed in the plate, whereby hanger 20c may be angled if desired. 80
- It will be seen that there is provided a new and improved cantilever hanger adapted to support a wide variety of articles on an 85
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- apertured panel of any type, including the standard pegboard presently employed, or the improved panel described hereabove. The article supporting bars, which may take a variety of forms to suit the character of goods to be displayed, may be quickly and easily mounted on the board, as described above, whereupon they automatically lock themselves securely in place and remain so whether free, or loaded. Thereafter, they are readily removed by application of moderate manual force, as described.
- WHAT WE CLAIM IS:—
1. An article supporting cantilever-type hanger adapted for detachable engagement with an apertured supporting panel which hanger comprises
 - a. a bar
 - b. a plate fixed to said bar in a plane generally normal thereto,
 - c. separate generally U-shaped tenuous elements connected to the upper and lower portions of said plate for detachable engagement with apertures in a supporting panel,
 - d. the tenuous element connected to the upper portion of said plate terminating in prongs extending inwardly and upwardly beyond the upper edge of said plate, and
 - e. the tenuous element connected to the lower portion of said plate terminating in resilient prongs extending transversely therefrom in directions slightly out of parallelism with each other to enhance their frictional engagement with the walls of the apertures in which they are to be inserted, to inhibit accidental displacement of the hanger from said panel.
 2. A hanger as set forth in Claim 1, wherein in said last-mentioned prongs are deformed from straight lines to enhance their frictional engagement with the apertures in the panel.
 3. A hanger according to Claim 1 or Claim 2 wherein the plate has its upper and lower marginal portions bent over to form overlying flanges.
 4. A combination of panel and hanger as claimed in any preceding claim wherein the panel has apertures for receiving the tenuous elements of the hanger, said apertures being substantially three thirty-second inches in diameter and bearing a pattern tending to distract attention from the apertures.
 5. A combination according to Claim 4, wherein the panel is formed of sheet metal with an attention distracting pattern impressed in the exposed surface thereof.
 6. A hanger substantially as herein described with reference to the accompanying drawings.
 7. A combination of panel and hanger substantially as herein described with reference to the accompanying drawings.

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